User manual for web interface

MAC 201

REF. 4449

AV-COFDM standalone modulator

IKUSI

www.ikusi.com

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Introduction

About this Manual

This manual describes the configuration environment of the MAC 201 unit based on a web interface via Ethernet connection.

The scope of the configuration options is complete: start-up, settings and fault monitoring for the MAC 201 unit.

The description consists of the procedure for connection and access to the configuration environment, the description of the environment and its contents, the configuration options and the interpretation of the information on the screen.

NOTE

This configuration manual is a practical reference. For the correct use and installation of the MAC 201 unit the corresponding user manual must be read.

Product Description

The MAC 201 unit is a standalone modulator of analogue TV input signals to COFDM digital TV output signal. The analogue TV input is composed of video and stereo audio. The COFDM digital TV output is tuned with an RF carrier that can be configured in VHF or UHF bands.

Suitable for individual residential installations, it is an ideal solution for the distribution of analogue video signals with COFDM digital TV modulation in a single standalone unit.

Features:

- Input: 2 AV analogue TV signals.
- Output: COFDM digital TV signal on RF carrier in VHF/UHF.
- RF loopthrough.
- Means of configuration:
  - Web interface via Ethernet connection
  - LCD display and control button.

Connection to the web interface

Ethernet connection

The web interface allows you to fully configure the MAC 201 unit through an Ethernet connection and a web browser.

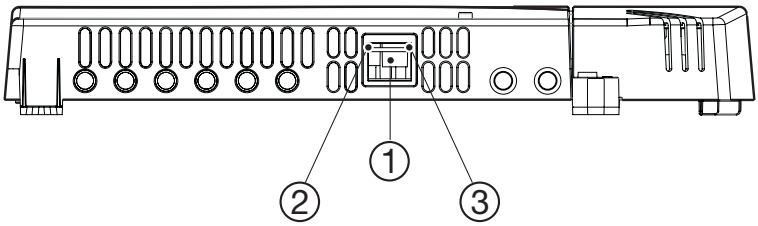
NOTE

To display the graphics provided in the unit configuration program correctly, we recommend installing the web browser Mozilla Firefox 1.5 or higher (www.mozilla.com) in the control PC.

NOTE

Use a PC with an Ethernet network card and an Ethernet CAT-5E crossover cable.

1) Access the TCP/IP PROPERTIES of the PC and configure the following parameters:
   - ☐ IP ADDRESS OF THE PC: 192.168.1.1
   - ☐ SUBNET MASK: 255.255.255.0
2) Connect the PC to the LAN port (RJ-45) of the MAC 201 unit (position ① in the following diagram).



KEY

① Ethernet connector (LAN port, RJ-45)
② Link LED
③ Activity LED

NOTE

The Ethernet connector of the MAC 201 (position ① in the above diagram) has two indicator lights:

- The link is correct when the link LED (position ② in the above diagram) is lit.
- There is activity in the link when the activity LED (position ③ in the above diagram) is flashing.

NOTE

The configuration process must be made in local mode, although later you will be able to access the unit from any PC in the LAN.

3) Launch the web browser and enter the MAC 201 unit's IP address:

- INITIAL IP ADDRESS: 192.168.1.6

4) Click on ENTER to access the welcome screen.

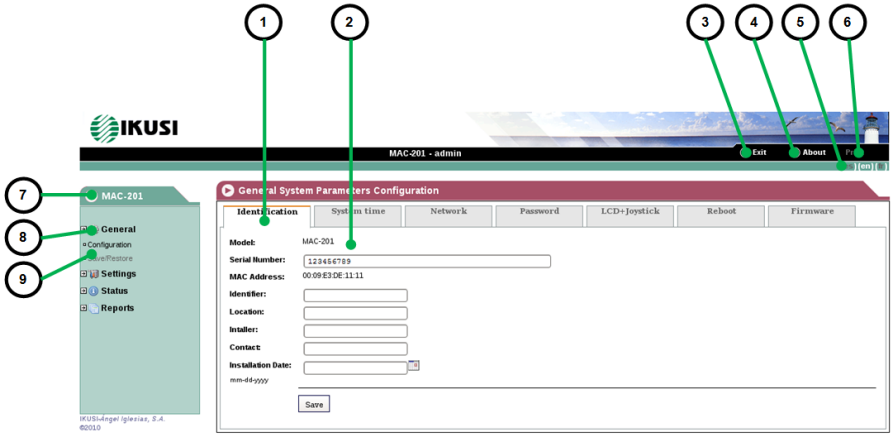
5) Enter the user name “Admin” and the password “admin”.

NOTE

The unit with which you have connected the PC disconnects automatically after 15 minutes without interaction.

General configuration

Main menu



KEY

1. Configuration screens
2. Work area
3. Exit button
4. Information button
5. Language selection
6. Print button
7. Menu selection area
8. Main menu
9. Submenus

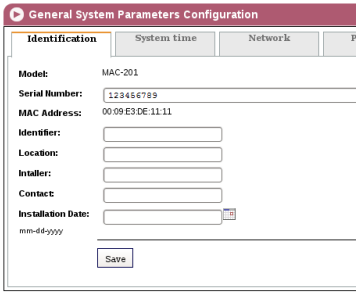
- To explore the different menus, select each one in the menu area (position 8 in the above diagram). Depending on the requirements of each menu, they will consist of one or more submenus (position 9 in the above diagram). Each submenu will consist of one or more configuration tabs (position 1 in the above diagram).
- To obtain information about the web interface, click on the option ABOUT (position 4 in the above diagram). The window on the right appears with the corresponding information.

- To change the interface language, click on the option corresponding to your language (position 5 in the above diagram): ES, Spanish; EN, English; FR, French.
- To print the interface screen, click on the option PRINT (position 6 in the above diagram).

- To exit the interface screen, click on the option EXIT (position ③ in the above diagram).

Identification

1) Select the GENERAL menu and then the CONFIGURATION submenu.
2) Select the IDENTIFICATION tab.



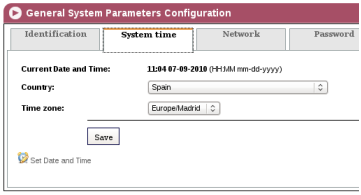
The IDENTIFICATION configuration tab establishes the identification data of the MAC 201 unit.

- MODEL: shows the name of the model. This data cannot be modified.
- SERIAL NUMBER: shows the serial number of manufacture of the unit.
- MAC ADDRESS: automatically shows the MAC address of the unit for its connection to the network.
- IDENTIFIER: identifying name assigned to the unit by the installer or operator.
- LOCATION: name of the site where the unit is installed (for example, a postal address).
- CONTACT: contact details of the installer or operator (for example, a telephone number).
- INSTALLATION DATE: date of installation and start-up of the unit.

3) Once finished configuring the data you can save it by clicking on SAVE in the lower part of the screen.

System time

1) Select the GENERAL menu and then the CONFIGURATION submenu.
2) Select the SYSTEM TIME tab.



The SYSTEM TIME configuration tab establishes the date, time and the reference time zone of the MAC 201 unit.

- CURRENT DATE AND TIME: shows the time, date and its format (HH:MM DD-MM-YYYY).
- COUNTRY: select the country in which the unit is operating.
- TIME ZONE: establishes the time zone applicable to the country in which the unit is operating.

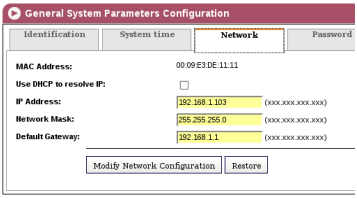
3) To modify the date and time of the unit, click on the option CONFIGURE DATE AND TIME in the lower part of the screen.

4) Once finished configuring the data you can save it by clicking on SAVE in the lower part of the screen.

Network

1) Select the GENERAL menu and then the CONFIGURATION submenu.

2) Select the NETWORK tab.



The NETWORK configuration tab establishes the parameters for connecting the MAC 201 unit to the Ethernet network.

- MAC ADDRESS: the unit automatically shows its MAC address for connection to the network.
- USE DHCP TO RESOLVE IP: select this option for the unit to obtain an IP address automatically using the DHCP protocol. If you select this option it will not be necessary for you to configure the following fields.

NOTE

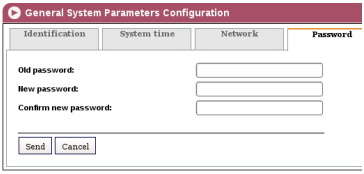
If the administrator of the local area network assigns static IP network addresses, never activate this option. Only activate this option if there is a local area network switching unit capable of assigning dynamic IP addresses by DHCP protocol.

- IP ADDRESS: enter a static IP address within the valid range for the local area network to which the unit is connected.
- NETWORK MASK: enter the local area network mask.
- DEFAULT GATEWAY: enter the IP address of the default gateway in the local network to which the unit is connected.

Password

1) Select the GENERAL menu and then the CONFIGURATION submenu.

2) Select the PASSWORD tab.



The PASSWORD configuration tab enables you to change the current password for access to the web interface of the MAC 201 unit (see section **Connection to the web interface**).

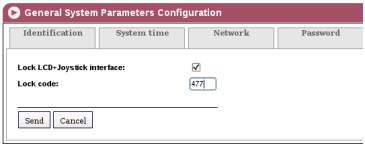
- OLD PASSWORD: enter the current password.
- NEW PASSWORD: enter the new password.

- REPEAT NEW PASSWORD: repeat the new password.

3) To activate the new password click on SEND in the lower left part of the PASSWORD tab. The new password will be necessary the next time you access the web interface.

LCD+Joystick

1) Select the GENERAL menu and then the CONFIGURATION submenu.
2) Select the menu LCD+JOYSTICK.

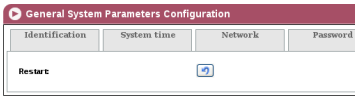


The LCD+JOYSTICK configuration tab lets you block the unit making it impossible to modify it using the control button and display.

- BLOCKING THE LCD+JOYSTICK INTERFACE: Select the activation box to block the unit with a code.
- BLOCKING CODE: Enter the code that unblocks the unit through the LCD display and using the control button.

Restart

1) Select the GENERAL menu and then the CONFIGURATION submenu.
2) Select the RESTART tab.



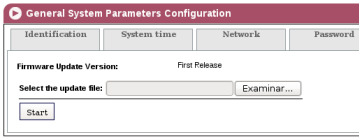
The RESTART configuration tab enables you to restart the MAC 201 unit.

- RESTART: to restart the unit click on the RESTART button on the screen.

3) After restarting the unit the welcome screen appears (see section **Ethernet Connection**).

Firmware

1) Select the GENERAL menu and then the CONFIGURATION submenu.
2) Select the FIRMWARE TAB.



The FIRMWARE configuration tab enables you to update the software of the MAC 201 unit.

- FIRMWARE VERSION: the unit automatically shows the firmware version currently installed.
- SELECT UPDATE FILE: click on the BROWSE button to select the firmware update file for the unit.

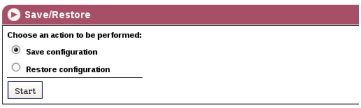
NOTE

The firmware update file must be saved on the PC's hard disc (you can download it at http://www.ikusi.com).

3) To load the new firmware click on the START button at the end of the tab.

Save/restore configuration

1) Select the GENERAL menu and then the SAVE/RESTORE submenu.



All the configuration data established in the unit and accessible through the menus, submenus and tabs of the web interface can be stored in a backup file.

Likewise, all the unit configuration data can be restored using an existing backup file.

2) Select SAVE CONFIGURATION and click on the START button to save the backup file. A window will appear in which you can select the location and the name of the backup file.

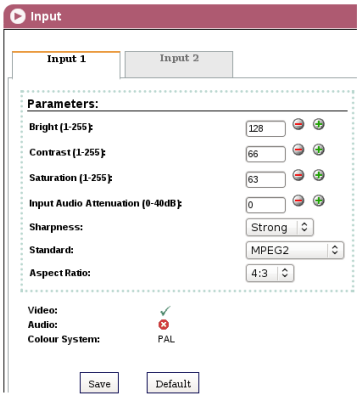
3) Select RESTORE CONFIGURATION and click on the START button to save the backup file. A window will appear in which you can select the location and the backup file.

Signal settings

Inputs

1) Select the SETTINGS menu and then the AV INPUT submenu.

2) Select the INPUT 1 tab.



The INPUT 1 tab displays the status of the AV analogue TV input in input AV1 and lets you modify how the audio and video components are dealt with.

Information on the status of the AV1 input signal:

- VIDEO: informs whether there is a valid video signal to input AV1.
- AUDIO: informs whether there is a valid audio signal to input AV1.
- COLOUR SYSTEM: informs of the colour system of the signal to input AV1. This can be PAL, NTSC or SECAM.

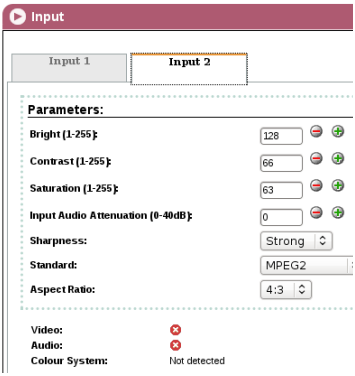
Definable parameters of the signal in AV1:

- BRIGHTNESS (1-255): configures the brightness of the image within the range of values from 1 to 255. You can enter a value or increase or decrease unit by unit with the buttons on the right of the value field.
- CONTRAST (1-255): configures the contrast of the image within the range of values from 1 to 255. You can enter a value or increase or decrease unit by unit with the buttons on the right of the value field.
- SATURATION (1-255): configures the saturation of the image within the range of values from 1 to 255. You can enter a value or increase or decrease unit by unit with the buttons on the right of the value field.
- AUDIO ATTENUATION (DB) (0-40): configures the audio attenuation within the range from 0 dB to 40 dB. You can enter a value or increase or decrease unit by unit with the buttons on the right of the value field.
- SHARPNESS: configures the sharpness of the video image by selecting one of several preset values.
- STANDARD: allows you to select the coding standard of the digitalised audio and video signal from the options MPEG2 and MPEG4.
- ASPECT RATIO: allows you to select the aspect ratio of the image from the options 16:9, 4:3 and 1:1.

3) To store the configuration selected click on the SAVE button in the lower part of the tab.

4) To restore the default values click on the DEFAULT button in the lower part of the tab.

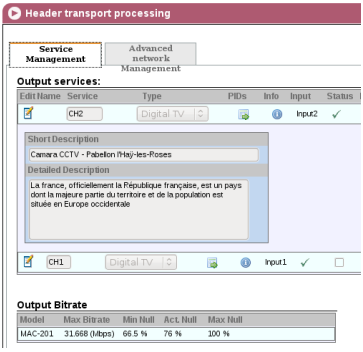
5) To configure the AV2 input, select the INPUT 2 tab. The information in the configuration options and its meaning are completely identical to that shown for INPUT 1.



Service Management

1) Select the SETTINGS menu and then the SERVICE MANAGEMENT submenu.

2) Select the SERVICE MANAGEMENT tab.



The SERVICE MANAGEMENT tab lets you view and modify the services processed in the MAC 201 unit.

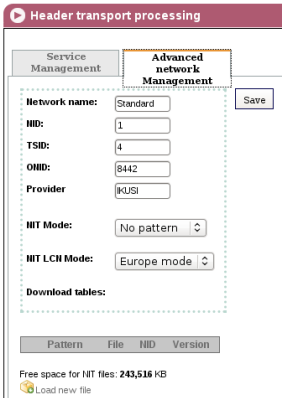
- OUTPUT SERVICES:
  - EDIT NAME: click on the icon to edit the name of the service corresponding to each input and save the LCN values.
  - SERVICES: displays the name of each service.
  - TYPE: modifies the type of service.
  - PIDS: click on the icon to view the PID for each service.
  - INFO: allows you to view and edit information on the service (summarised and detailed descriptions).
  - INPUT: displays the input corresponding to each service.
  - STATUS: displays the status of each service.
  - BLOCKED: to block any of the services, click on the corresponding box.
  - LCN: displays the logical channel number. If the background is yellow it cannot be modified.
- OUTPUT BITRATE:
  - MODEL: displays the model of the unit.
  - MAX. BITRATE: displays the maximum binary data speed supported by the unit.
  - MIN. NULL: displays the minimum percentage of binary data in the output that does not contain information.
  - ACT. NULL: displays the current percentage of binary data in the output that does not contain information.

- MAX. NULL: displays the maximum percentage of binary data in the output that does not contain information.

Advanced Service Management

1) Select the SETTINGS menu and then the SERVICE MANAGEMENT submenu.

2) Select the ADVANCED MANAGEMENT tab.



The ADVANCED MANAGEMENT tab lets you configure the NIT table management (Network Identifier Table).

- NETWORK NAME: allows you to assign a name to the network.
- NID: allows you to assign a value to the network identifier.
- TSID: allows you to assign a value to the identification of the transport current or TS.
- ONID: allows you to assign a value to the original network identifier.
- PROVIDER: allows you to specify the name of the service provider.
- NIT MODE: allows you to select the NIT mode.
  - OFF: the NIT is not inserted.
  - WITHOUT MODEL: the NIT generated by the unit is inserted.
  - INTEGRATION WITH MODEL NIT: the information generated by the unit is integrated in a selected model NIT (see option LOAD NEW FILE in step 3 of this chapter). If the TSID coincides, it replaces the information in the model NIT with that of the unit.
- NIT LCN MODE: Allows you to select the mode of the NIT LCN.
  - OFF: the LCN descriptor is not inserted in the NIT
  - EUROPE MODE: the descriptor for Europe is inserted.
  - INDEPENDENT TELEVISION COMMISSION: the descriptor for the UK is inserted.
  - NORDIG MODE V1: the descriptor according to the Nordig V1 specification is inserted.
  - NORDIG MODE V2: the descriptor according to the Nordig V2 specification is inserted.
  - GENERIC MODE: generic LCN descriptor.
- FREE SPACE FOR NIT FILE: informs of the additional space in the memory of the unit available for the current NIT or any NIT files larger than the current one that may be loaded.

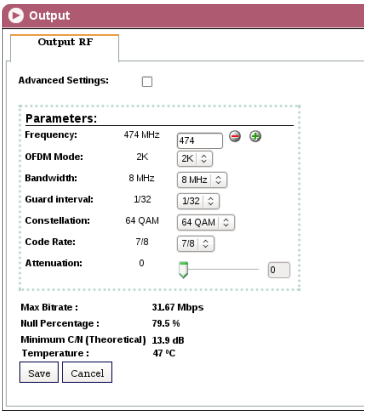
3) To load a new NIT file click on the option LOAD NEW FILE in the lower part of the screen. A new window lets you select the location and the name of the NIT file that you wish to load.

NOTE

The model NIT option lets you combine the NIT information of the unit with an external NIT, resulting in a combined NIT of both sets of information. If the TSIDs coincide, they are replaced by those of the unit.

Output

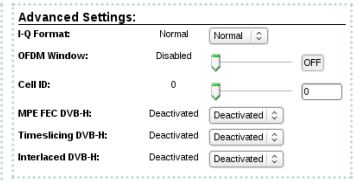
1) Select the SETTINGS menu and then the OUTPUT submenu.



The RF OUTPUT tab displays the configuration parameters of the output signal radio frequency and lets you modify it for flexible setting in the output of the unit.

- PARAMETERS:
  - FREQUENCY: displays the output frequency of the current radio frequency carrier and allows you to modify its value (directly on the value field or increasing or decreasing unit by unit using the buttons to the left of the field). The frequency value must be within the valid range for the VHF or UHF bands.
  - OFDM MODE: configures the OFDM mode by selecting from the values 2K and 8K.
  - BANDWIDTH: configures the bandwidth by selecting from the values 6, 7 and 8 MHz.
  - GUARD INTERVAL: configures the guard interval by selecting from the values 1/4, 1/8, 1/16 and 1/32 of symbol.
  - CONSTELLATION: configures the constellation of the output modulation by selecting from the options 16QAM and 64QAM.
  - CODE RATE: configures the redundant code rate by selecting from the values 1/2, 2/3, 3/4, 5/6 and 7/8.
  - ATTENUATION: configures the attenuation for the radio frequency carrier signal to the output using a sliding bar to vary this value within the range of 0 dB to 47 dB.
  - MAX BIT RATE: reports the maximum binary data speed in the output of the unit.
  - NULL PERCENTAGE: reports on the percentage of binary data in the output without information.
  - MINIMUM C/N (THEORETICAL): reports the minimum theoretical carrier to noise ratio in the output.
  - TEMPERATURE: displays the operating temperature in the unit.

2) Select the option ADVANCED PARAMETERS activating the box in the upper left part of the screen to view the advanced parameters of the output signal of the unit.



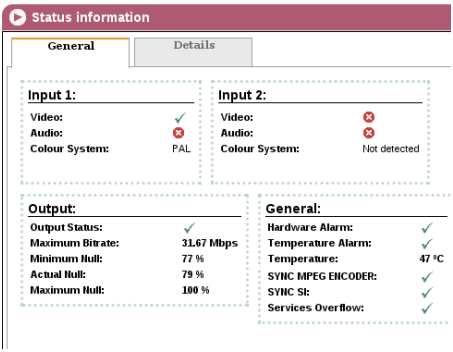
- ADVANCED PARAMETERS:
  - I-Q FORMAT: configures the format of the I and Q digital signals that will be modulated.
  - OFDM WINDOW: allows you to activate and configure the OFDM window using a sliding bar and an OFF button.
  - CELL ID: configures the cell identification value using a sliding bar or inserting a value directly in the field on the right of the bar that is greater than 0.
  - MPE FEC DVB-H: allows you to activate and deactivate multiprotocol encapsulation with error correction without return channel for DVB-H signal.
  - TIMESLICING DVB-H: allows you to activate and deactivate the transmission in shared time for a greater consumption efficiency in the transmission of DVB-H signals.
  - DVB-H INTERLACING: allows you to activate and deactivate the interlacing in the transmission of DVB-H signals.

Status information

Status information

1) Select the STATUS menu and then the STATUS INFORMATION submenu.

2) Select the GENERAL tab.



The GENERAL tab in STATUS INFORMATION shows the input status, the output status and other general unit parameters (alarms, temperature and services).

- INPUT 1 and INPUT 2:
  - VIDEO: informs whether there is a valid video signal to the input.
  - AUDIO: informs whether there is a valid audio signal to the input.
  - COLOUR SYSTEM: informs on the colour system to the input. This can be PAL, NTSC or SECAM.
- OUTPUT:
  - OUTPUT STATUS: displays on the status of the output.
  - MAXIMUM BITRATE: displays the binary speed of the data to the output.
  - MINIMUM NULL: displays the minimum percentage of binary data in the output without information.
  - ACTUAL NULL: displays the current percentage of binary data in the output without information.
  - MAXIMUM NULL: displays the maximum percentage of binary data in the output without information.
- GENERAL:
  - HARDWARE ALARM: informs whether any hardware alarms have been triggered.
  - TEMPERATURE ALARM: informs whether any temperature alarms have been triggered. This is activated if the unit exceeds the minimum or maximum temperature (from 0 to 45 °C).
  - TEMPERATURE: reports the current operating temperature of the unit.
  - SYNC MPEG ENCODER: reports on the optimum running of the MPEG encoder synchronisation.
  - SYNC SI: informs of the optimum status of the synchronisation for SI.
  - SERVICES OVERFLOW: informs whether there is a services overflow.

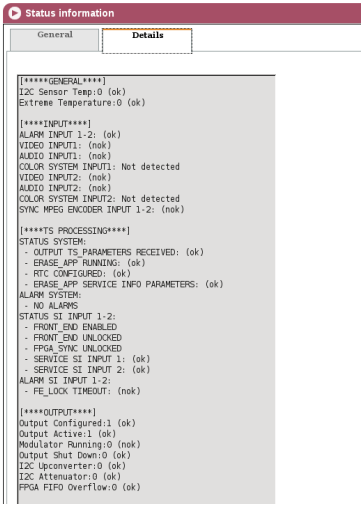
3) Select the DETAILS tab.

The DETAILS tab offers a detailed on-screen report as to the general running of the unit.

This report consists of four sections:

- GENERAL: temperature of the unit.
- INPUT: alarms and status of the inputs.
- TS PROCESSING: transport processing.
- OUTPUTS: output status.

The detailed general status report can be exported to a text file. To save this text file click on the SAVE TO FILE button in the lower part of the screen. A window will appear in which you can select the location and the name of the file generated.



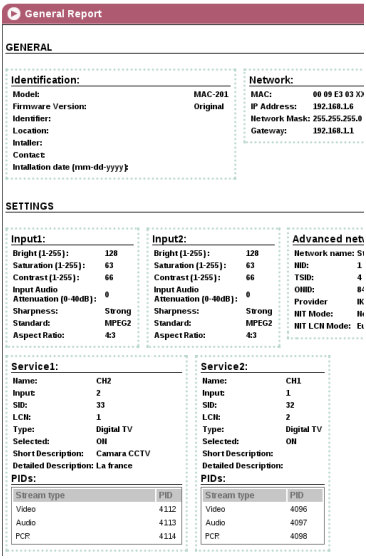
Reports

General

1) Select the REPORTS menu and then the GENERAL REPORT submenu.

The general report provides information on the general configuration of the unit on the screens of the following submenus:

- GENERAL > CONFIGURATION > IDENTIFICATION
- GENERAL > CONFIGURATION > NETWORK
- SETTINGS > AV INPUT > INPUT 1
- SETTINGS > AV INPUT > INPUT 2
- SETTINGS > SERVICE MANAGEMENT > SERVICE 1
- SETTINGS > SERVICE MANAGEMENT > SERVICE 2
- SETTINGS > SERVICE MANAGEMENT > ADVANCED SERVICE MANAGEMENT



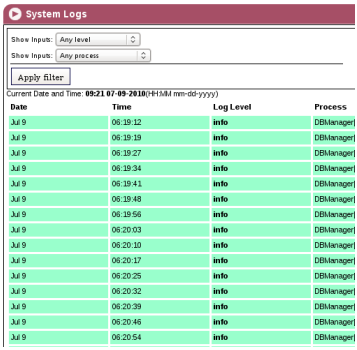
Logs

1) Select the REPORTS menu and then the SYSTEM LOGS submenu.

The system log reports the events in the unit since the last restart.

The inputs shown in this report can be filtered depending on the level and process:

- SHOW INPUTS
  - AT ANY LEVEL
  - INFO
  - NOTICE
  - WARNING
  - DEBUG
  - ERROR
  - CRITICAL



- SHOW INPUTS
  - ANY PROCESS
  - NIM_AV: AV input
  - IHM_JLCD: LCD interface + joystick
  - DBMANAGER: database manager
  - PROCESATS: DVB processing
  - RFOUT: COFDM output
  - KERNEL: operational core of the unit
  - OTHERS: other programs

2) To apply the filter click on the APPLY FILTERS button.

The unit log shows the current date and time in the format HH:MM DD MM YYYY.

Each entry in the report consists of the following fields:

- DATE: month and day of the report entry.
- TIME: entry time of the report in the format HH:MM:SS.
- LOG LEVEL: report entry category (ERROR or INFO).
- PROCESS: identification of the process that generated the report entry.
- MESSAGE: text describing the report entry.

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